

**Current Status of Claims**

1 - 22. (previously canceled)

23. (currently amended) An optical transmission module embodied in an integrated circuit, comprising:

an optical transmission element;

a driver comprising a driver input configured to drive the optical transmission element in response to a transmission signal applied to the driver input to produce a drive signal for the optical transmission element;

~~an internal~~ programmable control device configured to selectively drive the driver in a program mode of operation; and

a multiplexing device connected between a signal input comprising an external connecting pin of the transmission module, the driver input and the programmable control device, and configured to selectively pass an input signal at the external connecting pin of the signal input of the transmission module to the control device in program mode or to the driver in a transmission mode of operation.

24. (previously presented) The optical transmission module as claimed in claim 23, wherein the multiplexing device comprises a control input via which a control signal is fed into the multiplexing device, and wherein the multiplexing device is configured to switch in response to the control signal from a program mode switching state in which the signal input of the transmission module and the programmable device are connected, to a transmission mode switching state in which the signal input of the transmission module and the driver input are connected, or vice versa.

25. (previously presented) The optical transmission module as claimed in claim 23, wherein the multiplexing device is configured to determine whether the input signal applied to the signal input of the transmission module is a programming signal for the programmable control device or a transmission signal for the driver, and wherein the multiplexing device is configured to switch the input signal automatically to the programmable control device if the input signal is a programming signal, or switch the input signal to the driver if the input signal is a transmission signal.

26. (previously presented) The optical transmission module as claimed in claim 25, wherein the multiplexing device comprises:

a monitoring module comprising an input connected directly or indirectly to the signal input of the transmission module and configured to identify programming signals and transmission signals in each case; and

a multiplexing unit coupled to and driven by the monitoring module via a control connection and comprising at least one input, two outputs and the control connection, wherein the multiplexing unit is connected directly or indirectly at the input to the signal input of the transmission module and at the output to the driver input of the driver and to the programmable control device, respectively, and wherein the multiplexing unit is configured to connect the signal input of the transmission module to the driver input of the driver or to the control device as a function of a control signal from the monitoring module.

27. (previously presented) An optical transmission module, comprising:

- an optical transmission element;
- a driver comprising a driver input configured to drive the optical transmission element in response to a transmission signal applied to the driver input to produce a drive signal for the optical transmission element
- a programmable control device configured to selectively drive the driver in a program mode of operation; and
- a multiplexing device connected between a signal input of the transmission module, the driver input and the programmable device, and configured to selectively pass an input signal at the signal input of the transmission module to the control device in the program mode or to the driver in a transmission mode of operation, wherein the multiplexing device is configured to determine whether the input signal applied to the signal input of the transmission module is a programming signal for the programmable control device or a transmission signal for the driver, and wherein the multiplexing device is configured to switch the input signal automatically to the programmable control device if the input signal is a programming signal, or switch the input signal to the driver if the input signal is a transmission signal, and wherein the multiplexing device comprises:
  - a monitoring module comprising an input connected directly or indirectly to the signal input of the transmission module and configured to identify programming signals and transmission signals in each case; and
  - a multiplexing unit coupled to and driven by the monitoring module via a control connection and comprising at least one input, two outputs and the control connection, wherein the multiplexing unit is connected directly or indirectly at the input to the signal input of the transmission module and at the output to the driver input of the driver and to the programmable control device, respectively, and wherein

the multiplexing unit is configured to connect the signal input of the transmission module to the driver input of the driver or to the control device as a function of a control signal from the monitoring module; and

a line terminating impedance arranged between the multiplexing unit and the signal input of the transmission module.

28. (previously presented) The optical transmission module as claimed in claim 27, wherein an impedance of the line terminating impedance is configured to be controlled to differing values.

29. (previously presented) The optical transmission module as claimed in claim 28, wherein the line terminating impedance comprises an impedance control input connected to the monitoring module.

30. (previously presented) The optical transmission module as claimed in claim 29, wherein the monitoring module controls the line terminating impedance to an impedance value that is suitable for transmission signals when a transmission signal is applied to the signal input of the transmission module in the transmission mode, and to an impedance value that is suitable for a programming signal when a programming signal is applied to the signal input of the transmission module in a program mode of operation.

31. (previously presented) The optical transmission module as claimed in claim 30, wherein the monitoring module is configured to switch the line terminating impedance to a high impedance value when a programming signal is applied to the signal input of the transmission module in the program mode.

32. (previously presented) An optical transmission module, comprising:

- an optical transmission element;
- a driver comprising a driver input configured to drive the optical transmission element in response to a transmission signal applied to the driver input to produce a drive signal for the optical transmission element;
- a programmable control device configured to selectively drive the driver in a program mode of operation;
- a multiplexing device connected between a signal input of the transmission module, the driver input and the programmable control device, and configured to selectively pass an input signal at the signal input of the transmission module to the control device in the program mode or to the driver in a transmission mode of operation; and
- a pattern generator, and wherein the multiplexing device is configured to connect the pattern generator to the driver when the signal input of the transmission module is connected to the control device in the program mode.

33. (previously presented) The optical transmission module as claimed in claim 32, wherein the multiplexing device comprises a control input via which a control signal is fed into the multiplexing device, and wherein the multiplexing device is configured to switch in response to the control signal from a switching state that connects the signal input from the transmission module and the programmable control device in the program mode, to a switching state that connects the signal input of the transmission module and the driver input of the driver in the transmission mode, or vice versa.

34. (previously presented) The optical transmission module as claimed in claim 32, wherein the multiplexing device is configured to determine whether the input signal that is applied to the signal input of the transmission module is a programming signal for the control device or is a transmission signal for the driver, and wherein the multiplexing device switches the input signal automatically to the control device if the input signal is a programming signal, and switched it to the driver if the input signal is a transmission signal.

35. (previously presented) The optical transmission module as claimed in claim 34, wherein the multiplexing device comprises:

    a monitoring module comprising an input connected directly or indirectly to the signal input of the transmission module and configured to identify programming signals and transmission signals; and

    a first multiplexing unit coupled to and driven by the monitoring module via a control connection and comprising at least one input, two outputs and the control connection, wherein the first multiplexing unit is connected directly or indirectly at the input to the signal input of the transmission module and at the output to the driver input of the driver and to the programmable control device, and wherein the first multiplexing unit is configured to connect the signal input of the transmission module to the driver input of the driver or to the control device as a function of a control signal from the monitoring module.

36. (previously presented) The optical transmission module as claimed in claim 35, wherein the multiplexing device further comprises a second multiplexing unit with at least two signal inputs, one signal output and one control connection, wherein one of the two signal inputs of the second multiplexing unit is connected directly or indirectly to that output of the first multiplexing unit that is associated with the driver, the other of the two signal inputs of the second multiplexing unit is connected directly or indirectly to the pattern generator, the signal output of the second multiplexing unit is connected directly or indirectly to the driver, the control connection of the second multiplexing unit is connected directly or indirectly to the monitoring module, and wherein the monitoring module is configured to drive the second multiplexing unit such that the output signals from the pattern generator are passed to the driver if the signal input of the transmission module and programmable control device are connected to the first multiplexing unit.

37. (previously presented) The optical transmission module as claimed in claim 25, wherein the multiplexing device comprises a level detector configured to measure a signal level of the input signal at the signal input of the transmission module, and wherein the multiplexing device is configured to determine whether the input signal is a transmission signal for the transmission device or a programming signal for the control device based on an evaluation of the measured signal level.

38. (currently amended) The optical transmission module as claimed in claim 37, wherein the multiplexing device is configured to regard the ~~input~~input signal applied to the signal input of the transmission module as a programming signal when the signal level is greater than or less than a predetermined threshold level.

39. (previously presented) An optical transmission module, comprising:

- a optical transmission element
- a driver comprising a driver input configured to drive the optical transmission element in response to a transmission signal applied to the driver input to produce a drive signal for the optical transmission element;
- a programmable control device configured to selectively drive the driver in a program mode of operation; and
- a multiplexing device connected between a signal input of the transmission module, the driver input and the programmable control device, and configured to selectively pass an input signal at the signal input of the transmission module to the control device in the program mode or to the driver in a transmission mode of operation,
  - wherein the multiplexing device is configured to determine whether the input signal applied to the signal input of the transmission module is a programming signal for the programmable control device or a transmission signal for the driver,
  - wherein the multiplexing device is configured to switch the input signal automatically to the programmable control device if the input signal is a programming signal, or switch the input signal to the driver if the input signal is a transmission signal,
  - wherein the multiplexing device comprises a level detector configured to measure a signal level of the input signal at the signal input of the transmission module,
  - wherein the multiplexing device is configured to determine whether the input signal is a transmission signal for the transmission device or a programming signal for the control device based on an evaluation of the measured signal level,
  - wherein the multiplexing device is configured to regard the input signal applied to the signal input of the transmission module as a programming signal when the signal level is greater than or less than a predetermined threshold level, and

wherein the level detector is arranged in a monitoring unit in the multiplexing device, and wherein the monitoring unit comprises a memory device configured to store the results of the signal evaluation.

40. (currently amended) The optical transmission module as claimed in claim 39, wherein the memory device comprises a ~~flipflop~~flip-flop.

41. (previously presented) The optical transmission module as claimed in claim 25, wherein the multiplexing device comprises a frequency detector configured to measure a frequency range of the input signal at the signal input of the transmission module, and wherein the multiplexing device is configured to determine whether the input signal is a transmission signal for the transmission device or is a programming signal for the control device based on an evaluation of the measured frequency range.

42. (previously presented) The optical transmission module as claimed in claim 41, wherein the multiplexing device is configured to regard the input signal applied to the signal input of the transmission module as a programming signal when the frequency range is outside a predetermined frequency range.

43. (previously presented) The optical transmission module as claimed in claim 25, wherein the multiplexing device comprises a code detector configured to evaluate a code sequence of the input signal applied to the signal input of the transmission module, and wherein the multiplexing device is configured to determine whether the input signal is a transmission signal or a programming signal based on an evaluation of the code sequence.

44. (previously presented) The optical transmission module as claimed in claim 43, wherein the multiplexing device is configured to regard the input signal applied to the signal input of the transmission module as a programming signal when the code sequence does not match a predetermined code sequence for transmission signals.